

IN THE CLAIMS:

1. (Currently Amended) A door lock mechanism configured for use with a trailer having a door, the door having an upper end and a lower end, said door lock mechanism comprising:

a continuous sleeve mounted on the door of the trailer, said sleeve having an upper end and a lower end, said sleeve extending along the door such that said upper end of said sleeve is proximate the upper end of the door and said lower end of said sleeve is proximate said lower end of the door;

a lockrod disposed generally in said sleeve, said lockrod being sandwiched between said sleeve and the door;

a handle assembly connected to said lockrod and external to said sleeve, said handle assembly hanging below the door; said handle assembly having structure thereon configured to engage corresponding structure on the trailer, thereby locking the door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking the door, said handle assembly having structure thereon configured to engage corresponding structure on the trailer, thereby locking the door in an open position.

2. (Canceled)

3. (Original) A door lock mechanism as defined in claim 1, wherein said sleeve is formed from a generally U-shaped channel in which said lockrod is disposed and first and second rails disposed on opposite sides of said U-shaped channel, said first and said rails being attached to the door.

4. (Original) A door lock mechanism as defined in claim 1, further comprising an end cap disposed at an end of said sleeve, said lockrod extending through an opening in said end cap, and a thrust bearing disposed between said end cap and said handle assembly.
5. (Original) A door lock mechanism as defined in claim 4, wherein said thrust bearing is formed from high density polyethylene.
6. (Original) A door lock mechanism as defined in claim 4, wherein said thrust bearing is split.
7. (Original) A door lock mechanism as defined in claim 1, said handle assembly including a handle and a tongue configured to engage corresponding structure on the trailer, thereby locking said handle in place.
8. (Previously Presented) A door lock mechanism as defined in claim 7, said handle assembly further including a lever disposed on said handle, said lever including a pin that extends through an aperture in said handle, said lever configured such that said lever can be manipulated relative to said handle to provide that said pin is disposed adjacent said tongue, thereby locking said handle in place.
9. (Original) A door lock mechanism as defined in claim 7, wherein said tongue is generally T-shaped and is configured to engage a corresponding generally T-shaped slot on the trailer.

10. (Original) A door lock mechanism as defined in claim 1, said handle assembly including a handle, a dog configured to engage corresponding structure on the trailer, and a member configured for engagement with the corresponding structure on the trailer, said member being moved into engagement with said corresponding structure primarily by gravity.

11. (Original) A door lock mechanism as defined in claim 10, wherein said member is mounted on said handle and is inclined at a predetermined angle relative to said handle.

12. (Original) A door lock mechanism as defined in claim 10, wherein said member is generally L-shaped.

13. (Original) A door lock mechanism as defined in claim 10, wherein said dog and said member are configured to engage a generally T-shaped slot on the trailer.

14. (Canceled)

15. (Previously Presented) A door lock mechanism as defined in claim 1, wherein said structure locking the door in place includes a cam thereon, and further comprising an end cap disposed at an end of said sleeve, said lockrod extending through an opening in said end cap, and a thrust bearing disposed between said end cap and said handle assembly, said handle assembly including a handle and handle structure configured to engage corresponding structure on the trailer, thereby locking said handle in place, wherein said handle structure is configured to engage corresponding handle receiving structure on the trailer, wherein a top of

said lockrod has structure thereon configured to engage corresponding structure on the trailer, and a bottom of said lockrod is connected to said handle assembly.

16. (Canceled)

17. (Currently Amended) A door lock mechanism as defined in claim 1, wherein said structure on said handle assembly configured to engage corresponding structure on the trailer includes including a cam thereon, and wherein said corresponding structure on the trailer includes further including a retaining structure on the side of the trailer, ~~the door being capable of being moved to an open position such that the door is opened and swung proximate to a side wall of the trailer, and wherein~~ when the door is in the open position, said cam is engaged with said retaining structure.

18. (Original) A door lock mechanism as defined in claim 17, wherein said retaining structure is a wicket which is pivotally attached to the side of the trailer.

19. (Canceled)

20. (Previously Presented) A door lock mechanism configured for use with a trailer having a door, the door defining a plane, said door lock mechanism comprising:

a lockrod mounted on the door; and

a handle assembly connected to said lockrod, said handle assembly having a first structure thereon configured to engage corresponding structure on the trailer, thereby locking

the door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking the door,

said handle assembly including a handle and a second structure provided on said handle and configured to engage a corresponding structure on the trailer, thereby locking said handle in place, said second structure including a dog provided on said handle to engage a corresponding opening on the trailer, a member provided on said handle and configured for engagement with the corresponding opening on the trailer, said member being inclined relative to a plane which is perpendicular to the plane defined by the door at an angle between zero and ninety degrees such that said member can be moved into engagement with said corresponding opening primarily by gravity.

21. (Previously Presented) A door lock mechanism configured for use with a trailer having a door, said door lock mechanism comprising:

a lockrod mounted on the door; and

a handle assembly connected to said lockrod, said handle assembly having a first structure thereon configured to engage corresponding structure on the trailer, thereby locking the door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking the door, said handle assembly including a handle and a second structure provided on said handle and configured to engage corresponding structure on the trailer, thereby locking said handle in place, said second structure including a tongue disposed on said handle, a lever disposed on said handle, said lever including a pin that extends through an aperture in said handle, said tongue and said pin being insertable into an aperture on the trailer, said lever configured such that said lever can be manipulated

relative to said handle to provide that said pin is disposed adjacent said tongue when inserted into the aperture.

22. (Previously Presented) A door lock mechanism as defined in claim 21, wherein said tongue is generally T-shaped and said aperture is generally T-shaped.

23. (Original) A door lock mechanism as defined in claim 20, wherein a top of said lockrod has structure thereon is configured to engage corresponding structure on the trailer, and a bottom of said lockrod is connected to said handle assembly.

24. (Original) A door lock mechanism as defined in claim 20, further comprising an end cap disposed at an end of said sleeve, said lockrod extending through an opening in said end cap, and a thrust bearing disposed between said end cap and said handle assembly.

25. (Original) A door lock mechanism as defined in claim 20, said handle assembly having cam structure thereon configured to engage corresponding structure on the trailer.

26. (Canceled)

27. (Previously Presented) A door lock mechanism configured for use with a trailer having a door, said door lock mechanism comprising:

a lockrod mounted on the door; and

a handle assembly connected to said lockrod, said handle assembly having a first structure thereon configured to engage corresponding structure on the trailer, thereby locking

the door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking the door,

said handle assembly including a handle and a second structure provided on said handle and configured to engage corresponding structure on the trailer, thereby locking said handle in place, said second structure including a dog provided on said handle to engage a corresponding opening on the trailer, a member provided on said handle and configured for engagement with the corresponding opening on the trailer, said member including a gripping portion and a tongue portion, said tongue portion configured to move into engagement with the corresponding opening on the trailer, said member being inclined relative to the horizontal at an angle between zero and ninety degrees such that said member can be moved into engagement with said corresponding opening primarily by gravity.

28. (Previously Presented) A door lock mechanism as defined in claim 20, wherein said member is generally L-shaped.

29. (Canceled)

30. (Previously Presented) A door lock mechanism as defined in claim 20, wherein said second structure further includes a base portion having an aperture therethrough, wherein said member includes an aperture therethrough configured such that when said member is in engagement with the corresponding opening in the trailer, said aperture through said member is in alignment with said aperture through said base portion such that an associated pin can be inserted through said apertures.

31. (Previously Presented) A door lock mechanism configured for use with a trailer having a door, said door lock mechanism comprising:

a lockrod mounted on the door; and

a handle assembly connected to said lockrod, said handle assembly having a first structure thereon configured to engage corresponding structure on the trailer, thereby locking the door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking the door,

said handle assembly including a handle and a second structure provided on said handle and configured to engage corresponding structure on the trailer, thereby locking said handle in place, said second structure including a dog provided on said handle to engage a corresponding opening on the trailer, a member provided on said handle and configured for engagement with the corresponding opening on the trailer, said member being moved into engagement with said corresponding opening primarily by gravity, said second structure further includes a base portion having a protuberance thereon, wherein said member includes an aperture therethrough such that when said member is in engagement with the corresponding opening in the trailer, said aperture is in engagement with said protuberance on said base portion.

32. (Canceled)

33. (Canceled)

34. (Previously Presented) A door lock mechanism as defined in claim 20, wherein said member includes a tongue portion, said member being configured such that said tongue

portion can be manipulated relative to said dog to provide that said tongue portion is disposed adjacent said dog.

35. (Previously Presented) A door lock mechanism configured for use with a trailer having a door, said door lock mechanism comprising:

a lockrod mounted on the door;

a handle assembly connected to said lockrod, said handle assembly having a first structure thereon configured to engage corresponding structure on the trailer, thereby locking the door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking the door,

said handle assembly including a handle and a second structure provided on said handle and configured to engage corresponding structure on the trailer, thereby locking said handle in place, said second structure including a dog provided on said handle to engage a corresponding opening on the trailer, a member provided on said handle and configured for engagement with the corresponding opening on the trailer, said member being inclined relative to the horizontal at an angle between zero and ninety degrees such that said member can be moved into engagement with said corresponding opening primarily by gravity; and

a securing member provided on a side of the trailer, and the door being capable of being moved to an open position such that the door is opened and swung proximate to the side wall of the trailer, and wherein when the door is in the open position, said first structure is engaged with said securing member.

36. (Original) A door lock mechanism as defined in claim 35, wherein said securing member is a wicket which is pivotally attached to the side of the trailer.

37. (Original) A door lock mechanism as defined in claim 20, wherein said handle assembly hangs below the door.

38. (Previously Presented) A door lock mechanism configured for use with a trailer having a door, said door lock mechanism comprising:

a sleeve mounted on the door of the trailer;

an end cap disposed at an end of said sleeve;

a lockrod disposed in said sleeve and extending through an opening in said end cap;

a lock provided at an end of said lockrod for preventing rotational movement of said lockrod when said lock is engaged with corresponding structure on the trailer;

a handle assembly connected to said lockrod and configured for actuation to rotate said lockrod; and

a thrust bearing disposed between said end cap and said lock, said thrust bearing being in direct contact with said end cap and with said lock, said thrust bearing being rotatable relative to said end cap and relative to said lock.

39. (Previously Presented) A door lock mechanism as defined in claim 38, said handle assembly further including a handle, a tongue disposed on said handle, a lever disposed on said handle, said lever including a pin that extends through an aperture in said handle, said lever configured such that said lever can be manipulated relative to said handle to provide that said pin is disposed adjacent said tongue, thereby locking said handle in place.

40. (Canceled)

41. (Original) A door lock mechanism as defined in claim 38, said handle assembly including a handle, a dog provided on said handle to engage a corresponding opening on the trailer, a member provided on said handle configured for engagement with the corresponding opening on the trailer, said member being moved into engagement with said corresponding opening primarily by gravity.
42. (Original) A door lock mechanism as defined in claim 38, wherein said thrust bearing is formed from high density polyethylene.
43. (Original) A door lock mechanism as defined in claim 38, wherein said thrust bearing is split.
44. (Original) A door lock mechanism as defined in claim 38, wherein said end cap is formed from stainless steel.
45. (Previously Presented) A door lock mechanism as defined in claim 38, wherein said lock comprises a cam provided on said lockrod which is configured to engage corresponding structure on the trailer.
46. (Canceled)
47. (Original) A door lock mechanism as defined in claim 38, wherein said handle assembly hangs below the door.

48. (Previously Presented) A trailer comprising:

- a floor;
- a rear frame having an opening therethrough and structure on a bottom portion thereof;
- a door mounted in said rear frame;
- a lockrod mounted to said door; and
- a handle assembly connected to said lockrod, said handle assembly having a first structure thereon configured to engage said structure on said bottom portion of said rear frame, thereby locking said door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking said door, said handle assembly including a handle and a second structure provided on said handle and configured to engage into said opening in said rear frame, thereby locking said handle in place and preventing further substantial movement of said handle relative to said door, said second structure including a dog provided on said handle configured to engage said opening, a member provided on said handle and configured to engage said opening such that said member is adjacent said dog within said opening, said member preventing the removal of said dog from said opening.

49. (Previously Presented) A trailer as defined in claim 48, wherein said member includes a tongue disposed on said handle, a lever disposed on said handle, said lever including a pin that extends through an aperture in said handle, said lever configured such that said lever can be manipulated relative to said handle to provide that said pin is disposed adjacent said tongue.

50. (Original) A trailer as defined in claim 49, wherein said opening is generally T-shaped and said tongue is generally T-shaped for engagement therewith.

51. (Original) A trailer as defined in claim 48, wherein said rear frame includes top structure thereon and a top of said lockrod includes structure thereon configured to engage said corresponding top structure on said rear frame, and a bottom of said lockrod is connected to said handle assembly.

52. (Original) A trailer as defined in claim 48, further including a sleeve in which said lockrod is disposed, an end cap disposed at an end of said sleeve, said lockrod extending through an opening in said end cap, and a thrust bearing disposed between said end cap and said handle assembly.

53. (Previously Presented) A trailer as defined in claim 48, wherein said first structure on said handle assembly comprises a cam.

54. (Previously Presented) A trailer as defined in claim 48, wherein said second structure further includes a handle, said dog being provided on said handle to engage said opening in said rear frame.

55. (Original) A trailer as defined in claim 54, wherein said member includes a gripping portion and a tongue portion, said tongue portion configured to move into engagement with said opening in said rear frame.

56. (Original) A trailer as defined in claim 54, wherein said member is generally L-shaped.

57. (Original) A trailer as defined in claim 54, wherein said member is inclined at a predetermined angle relative to said handle.

58. (Original) A trailer as defined in claim 54, wherein said second structure further includes a base portion on which said member is mounted, said base portion having an aperture therethrough, said member including an aperture therethrough configured such that when said member is in engagement with said opening in said rear frame, said aperture through said member is in alignment with said aperture through said base portion such that an associated pin can be inserted through said apertures.

59. (Original) A trailer as defined in claim 54, wherein said second structure further including a base portion on which said member is mounted, said base portion having a protuberance thereon, wherein said member includes an aperture therethrough such that when said member is in engagement with the corresponding opening in the trailer, said aperture is in engagement with said protuberance on said base portion.

60. (Original) A trailer as defined in claim 54, wherein said second structure further includes a base portion, wherein said member is pivotally mounted on said base portion.

61. (Previously Presented) A trailer as defined in claim 54, wherein said member includes a tongue portion, said member being configured such that said tongue portion can be

manipulated relative to said structure to provide that said tongue portion is disposed adjacent said dog.

62. (Previously Presented) A trailer comprising:

a floor;

a rear frame having an opening therethrough and structure on a bottom portion thereof;

a door mounted in said rear frame;

a lockrod mounted to said door;

a handle assembly connected to said lockrod, said handle assembly having a first structure thereon configured to engage said structure on said bottom portion of said rear frame, thereby locking said door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking said door, said handle assembly including a handle and a second structure provided on said handle and configured to engage into said opening in said rear frame, thereby locking said handle in place and preventing further substantial movement of said handle relative to said door; and

a side wall and base rail connecting said side wall to said floor, a securing member provided on said base rail, and said door being capable of being moved to an open position such that said door is opened and swung proximate to said side wall, and wherein when said door is in the open position, said first structure is engaged with said securing member.

63. (Original) A trailer as defined in claim 62, wherein said securing member is a wicket which is pivotally attached said base rail.

64. (Original) A trailer as defined in claim 48, wherein said handle assembly hangs below the door.

65. (Previously Presented) A door lock mechanism as defined in claim 20, wherein said second structure further includes a base portion, wherein said member is pivotally mounted on said base portion.

66. (Previously Presented) A door lock mechanism configured for use with a trailer having a door, said door lock mechanism comprising:

a lockrod mounted on the door; and

a handle assembly connected to said lockrod,

said handle assembly having a first structure thereon configured to engage corresponding structure on the trailer, thereby locking the door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking the door,

said handle assembly including a handle and a second structure provided on said handle and configured to engage corresponding structure on the trailer, thereby locking said handle in place, said second structure including a dog provided on said handle configured to engage an opening on the trailer, a member provided on said handle and configured to engage the opening on the trailer such that said member is adjacent said dog within said opening, said member preventing the removal of said dog from the opening on the trailer.

67. (Previously Presented) A door lock mechanism as defined in claim 66, wherein said member includes a tongue disposed on said handle, a lever disposed on said handle, said

lever including a pin that extends through an aperture in said handle, said lever configured such that said lever can be manipulated relative to said handle to provide that said pin is disposed adjacent said tongue.

68. (Previously Presented) A door lock mechanism as defined in claim 67, wherein said tongue is generally T-shaped.

69. (Previously Presented) A door lock mechanism as defined in claim 66, wherein said second structure includes a handle, said dog being provided on said handle to engage said opening, said member being moved into engagement with said opening primarily by gravity.

70. (Previously Presented) A door lock mechanism configured for use with a trailer having a door, said door lock mechanism comprising:

a lockrod mounted on the door; and

a handle assembly connected to said lockrod,

said handle assembly having a first structure thereon configured to engage first corresponding structure on the trailer, thereby locking the door in place, said handle assembly configured for actuation to rotate said lockrod, thereby selectively locking and unlocking the door,

said handle assembly including a handle and a second structure provided on said handle and configured to engage second corresponding structure on the trailer, thereby locking said handle in place and preventing further substantial movement of said handle relative to the door, said second structure provided on said handle assembly including a

handle, a dog provided on said handle configured to engage an opening on the trailer, a member provided on said handle configured for engagement with said opening, said member being moved into engagement with said opening primarily by gravity, said member including a gripping portion and a tongue portion, said tongue portion configured to move into engagement with said opening.

71. (Previously Presented) A door lock mechanism as defined in claim 69, wherein said member is inclined at a predetermined angle relative to said handle.

72. (Previously Presented) A door lock mechanism as defined in claim 69, wherein said second structure further includes a base portion, wherein said member is pivotally mounted on said base portion.

73. (Previously Presented) A door lock mechanism as defined in claim 70, wherein said member includes a tongue portion, said member being configured such that said tongue portion can be manipulated relative to said structure to provide that said tongue portion is disposed adjacent said dog.